

## F2000 Compomer Restorative System (Project 98-01) (09/98)

Formerly classified as polyacrylic acid modified composite resins, compomers are primarily composite resin-like materials that contain one or more basic glass ionomer cement components. Some authors classify compomers as primarily light-cured, low-fluoride-releasing composite resins. These products are one-part pastes primarily packaged in a capsule delivery design. In comparison to glass ionomer restorative materials (GI) and resin modified glass ionomer (RMGI) materials, compomers handle more like composite resins, providing improved esthetics and easier polishability. Compomers demonstrate more wear resistance than glass ionomers, but have shown lower wear resistance, less strength, and poorer esthetics than composites. Compomers have the potential to release fluoride, but research indicates that compomers release less fluoride and may not inhibit artificial caries lesions as well as GIC and RMGI materials. In addition, compomers do not function as rechargeable fluoride-releasing reservoirs. Compomers do not undergo a true acid/base glass ionomer reaction and all currently marketed compomers require visible light activation for setting.



F2000 is 3M's compomer restorative material. 3M lists F2000 as a one-part, light curable, fluoride releasing, radiopaque paste. 3M purports F2000 with excellent physical properties and good clinical handling characteristics. It is available both in single-use capsules or multi-dose syringes. F2000 is available in 13 shades (9 Vita and 4 specialty). This glass filler has an average particle size of 3 m with a range of 1 - 10 microns. Filler loading is 84 percent by weight, 67 percent volume. F2000 is claimed to exhibit less microleakage than other compomers, which is attributed also to F2000's coefficient of thermal expansion (12.6 ppm/C) closely matching dentin's (11ppm/C). 3M states that F2000 is indicated for Class V (to include cervical erosion/abrasion lesions); root caries; Class I and II in primary teeth; Class III; Class II laminate or "sandwich" technique; temporary repairs; and core buildups (where approximately 50% remaining tooth structure provides support).

### Manufacturer:

3M Dental Products  
3M Center Building 275-2SE-03  
St. Paul, MN 55144-1000  
(800) 451-5761 EXT 1  
(800) 634-2249  
(612) 737-8761  
[www.mmm.com/dental](http://www.mmm.com/dental)

### Suggested Retail Price:

\$208.35 3M F2000 Compomer Restorative - Capsule (Part # 2023) Introductory Kit:

- 60 - 0.2 g Capsules -10 each of shades A2, A3, A4, B2, C2, D3
- 6 ml bottle of Single Bond Adhesive
- 3 ml phosphoric acid etchant syringe and tips
- Brush Handle
- 100 Fiber tip applicators
- Shade guide
- One-hole mixing well
- Technique guides

\$48.35 Additional Capsules in lots of ten capsules each in the various shades available: A2, A3, A3.5, A4, B2, B3, C2, C4, D3, Pedo Paste, Cervical Gray, Cervical Yellow, Blue (for core buildups).

\$243.35 3M F2000 Compomer Restorative - Syringe Introductory Syringe Kit (Part # 2022)

- Five - 4.0 g Syringes One each of shades A2, A3, A4, C2, D3
- 6 ml bottle of Single Bond Adhesive
- 3 ml phosphoric acid etchant syringe and tips
- Brush Handle
- 100 Fiber tip applicators
- Mixing Pad
- Shade guide
- One-hole mixing well
- Technique guides

\$48.35 Additional 4.0 g syringes of each shade (as in capsules)

\$65.00 3M F2000 Compomer Primer/Adhesive in Clicker™ Dispensing System (Item # 2024)  
Contains 1 2.6ml Primer/Adhesive

**Government Price:**

\$135.45 F2000 Introductory Pack - Capsule (Part # 2023) as described above.

\$31.45 Additional Capsules (as listed above)

\$158.20 F2000 Introductory Pack - Syringe (Part # 2022) as described above.

\$31.45 Additional Syringes (as listed above)

\$42.25 3M F2000 Compomer Primer/Adhesive in Clicker™ Dispensing System (Item # 2024) as described above.

**ADVANTAGES**

- + Straight forward, readable instructions with adequate detail and graphics.
- + Logical packaging configuration.
- + Clinical evaluators found acceptable esthetics.
- + Better clinical handling characteristics than glass ionomer materials.
- + Adequate viscosity that resists slumping.
- + Adequate working time.
- + Compatible with existing composite resin restorative procedures.
- + Simple delivery system.
- + Radiopaque.
- + Potential for fluoride release.
- + Surface hardness is greater than that of most compomers.
- + Acceptable dentinal bond strength with supplied dentin bonding agent.

**DISADVANTAGES**

- Evaluators reported it was softer than composite material during finishing and polishing.
- Requires dentin bonding agent for tooth structure adhesion.
- Studies report less fluoride release than glass ionomer materials.
- Not as esthetic as composites.
- No long-term clinical data.
- Coefficient of thermal expansion determined to be similar to composites.

**SUMMARY AND CONCLUSIONS:**

F2000 compomer restorative material was well received by clinical evaluators. Evaluators appreciated its straightforward delivery system and easy to read instructions. F2000 was found to be compatible with existing composite techniques and demonstrated adequate working time with

viscosity that resisted slumping. The majority of evaluators liked F2000's esthetics and thought its clinical handling characteristics were better than resin modified glass ionomer materials. F2000 demonstrates radiopacity, adequate dentin shear bond strength with Single Bond dentin bonding agent, and better surface hardness than most compomers. The manufacturer's reported coefficient of thermal expansion (12.4 ppm/C) was not confirmed by the US Army Dental Materials Testing Laboratory, which found the coefficient of thermal expansion to be 33 ppm/C. This is approximately three times greater than tooth structure. Compomers as a class do not yet have long term clinical data. **F2000** is rated **Acceptable** for federal dental clinic use.